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State of Illinois
ENVIRONMENTAL PROTECTION AGENCY

Mary A. Gade, Director
217/524-3300

2200 Churchill Road, Springfield, IL 62794-9276

A.4.1

September 8, 1993

Aubrey Manufacturing, Inc.
Attn: Mr. Michael Wirtz
6709 South Main Street
Union, Illinois 60180

Re: 1110905002 -- McHenry County
Aubrey Manufacturing Company
ILD005238159
Log No. C-686-M-2
Received: June 10, 1993
RCRA - Closure

Dear Mr. Wirtz:

This letter is in response to a document titled "Background Soil Sampling Report", dated June 9, 1993 and received by the Agency on June 10, 1993. This document was prepared by ERM Enviroclean - North Central, Inc. on behalf of Aubrey Manufacturing Company and contained the results of the background soil sampling conducted on April 27, 1993 in the vicinity of the hazardous waste surface impoundment undergoing RCRA closure at the above referenced facility. This submittal is hereby approved subject to the following conditions and modifications:

1. The Agency has reviewed the data submitted in the subject submittal and previous submittals and has concluded that no further soil sampling needs to be conducted and that no further soil remediation is necessary to meet the closure performance standards of 35 IAC 725.211, 725.214, and 725.328(a). This decision was reached without the use of the information presented in Table 7 of the subject submittal.

2. Aubrey shall continue monitoring the groundwater in accordance with Condition 3 of this Agency's July 15, 1993 closure plan approval letter.

3. Except as modified by this letter, closure shall be conducted in accordance with the Agency's closure plan approval letter dated February 24, 1993 (Log No. C-686) and the Agency's closure plan approval letter dated July 15, 1993 (Log No. C-686-M-1).

CLOSURE LOG # : 686-M-?
FACILITY : AUBREY MANUFACTURING INC
STATE ID # : 1110905002
FED ID # : ILD005238159
STATUS : P
TYPE : F
NOTIFY RPMS : N

1st-RECD : 93/06/10
90-DUE : 93/09/08
1-MAILED : 93/09/08
APP or REJ : APP

CERTIFICATION DUE :
CLOSED :
UNITS CLOSED : S04
UNITS REMAIN : NONE
G OR T STATUS:
COMMENTS : NO PART A

LOCATION : UNION
COUNTY : MCHENRY
REVIEWER : MAH
GAU REVIEWER :
NOTIFY FOS : Y
NOTIFY CMS : Y
PN : NA
INSP :
2nd-SCHED :
2nd-RECD :
60-DUE :
2-MAILED :

CERTIFICATION RECD :
CLEAN CLOSURE : Y
CIL SENT :
PECL SENT :

CONTAM SOIL-Y/N/?: Y ABOVE PQL-Y/N/?: ABOVE CUO-Y/N/?:
CONTAM-VO/SVO/M/?:
CONTAM GW-Y/N/?: ABOVE PQL-Y/N/?: ABOVE CUO-Y/N/?:
CONTAM-VO/SVO/M/?:

REMEDIATION-PROP/IN PROG/COMPLETE/NA: VOLUME: UNIT-T/CY:

SOIL VENT-Y/N: AERATE-Y/N/ON/OFF: STABILIZE-Y/N/ON/OFF:
CAP IN PLACE-Y/N: BIOREM-Y/N: INCIN-Y/N/ON/OFF:
LANDFILL-Y/N/ON/OFF: TREATMENT-Y/N/ON/OFF: PUMP & TREAT GW-Y/N:

PROCESS 1: S04	AMOUNT 1: ?	UNIT1: ?	ADD/DEL: DEL
PROCESS 2:	AMOUNT 2:	UNIT2:	ADD/DEL:
PROCESS 3:	AMOUNT 3:	UNIT3:	ADD/DEL:
PROCESS 4:	AMOUNT 4:	UNIT4:	ADD/DEL:
PROCESS 5:	AMOUNT 5:	UNIT5:	ADD/DEL:
PROCESS 6:	AMOUNT 6:	UNIT6:	ADD/DEL:

1) COMPLETE CLOSURE CHECKLIST
2) CALL FOS & MAKE SURE THESE ARE CORRECT AREAS TO CLOSE
3) STORAGE AREA INTEGRITY (CRACKS, GAPS, JOINTS, CURBS, ETC.)
4) STORAGE AREA RUNOFF/DRAINAGE
5) SAMPLING PARAMETERS W.R.T. WASTES MANAGED
6) SAMPLING METHODS AND LOCATIONS AND DEPTHS
7) ANALYTICAL METHODS (SW-846)
8) REVIEW NOTES
   a. Intro to Project -- Site name, location, brief description of submittal
   b. Pertinent Site History
   c. Summary/Review/Evaluation of Submittal
   d. Identification of Final Action to be Taken
   e. Discussion of Final Action, Including Discussion of Final Letter
9) COMPUTER BLANKS

I INTRODUCTION TO PROJECT

Log No. C-686 -M-~~1~~2

1. Facility Name Aubrey Manufacturing
2. Facility Location Union IL
3. Facility Contact Jim Kane, P.E. of ERM-North Central, Inc.
   a. Telephone Number 414-289-9505
4. Facility IEPA ID No. 1110905002
5. Facility USEPA ID No. ILD005238159
6. Log No. of Previous Activities Associated with Project C-686, C-686-M-1
7. Number of Submittal Associated with Current Project Discussed in this package 1
8. Information Regarding Each Submittal (Complete for each submittal made)
   a. Brief Description of Submittal "Background Soil Sampling Report" This submittal consists of the ~~new~~ results of additional soil sampling
   b. Date of Submittal: June 9 '93
   c. Date submittal received: June 10 '93
   d. Submitted by: ERM- North Central Inc. (Aubreys consultant)
   e. No. of pages submitted/title of reports submitted ≈ 1/3" of pages, "Background Soil Sampling Report"
   f. Reason submittal was made To demonstrate that inorganic values at the surface impoundment were consistant with background.
9. General Discussion of How Project Was Reviewed (complete here if only one submittal was made, delete otherwise)

c/intropro

STATE OF ILLINOIS
ENVIRONMENTAL PROTECTION AGENCY

IL 532-0357
ADM 39
054-002

Subject Aubrey
Data C-686-M-8 review
Reviewed by Mike Heaton Date September 1 '93

Aubrey manufacturing is undergoing RCRA closure of a surface impoundment that received occasional electroplating wastes

The submitted document contains background soil sampling information in addition to some additional confirmatory soil sampling (5550 thru 5555) collected on April 27 '93 in the area contigeous to the surface impoundment.

Background: For the background data obtained from a field west of the facility, the formula UCI = AVG + 1.96 SD was utilized, where UCI = 95% confidence interval, AVG = $\bar{x}$, & SD = σ_{n-1}.

Table 7 shows the results of their statistics, while Table 5 & Table 6 show the actual numbers (raw data) in table form.

Of the seven metals on Table 7, the Agency agrees with each except copper. BG. Soil samples BSS-6 thru BSS-10 appeared to be unnaturally high for copper & zinc (note that BSS-6 thru BSS-10 are the southern 5 background soil samples. In any event, zinc was not of concern at the surface impoundment (though it was detected, it was detected below Agency Class I CUOs.) Copper was re-analyzed using only BSS-1 thru BSS-5 data, which gave UCIs of 0.015 & 0.028 (their original values were 4.04 & 1.87).

Background soil samples were collected from two intervals, the 6"-12" interval and the 3'-5' interval. This was to account for the surface samples and also for the sidewalls / base of the excavation samples.

Each of the Agency calculated values were equal to, or less than, the UCIs given in Table 7. Note that only Cadmium and Copper had UCIs higher than the Agency established CUO.

STATE OF ILLINOIS
ENVIRONMENTAL PROTECTION AGENCY

IL 532-0357
ADM 39
054-002

Subject Aubrey
Data C-686-M-8 review
Reviewed by Mike Heaton Date September 2 '93

Figure 4 shows the hits at this facility above CUOs and background. This table should include a few hits of copper since the Agency rejected the original background concentration for copper. In any event, though, this table does demonstrate that the hits were all "minor" and not laterally consistent. Thus the volume of impacted soil is minor.

CORE (CUO Review & Evaluation) reviewed this data (submittal enclosed) and determined that the inorganics present in the soil were sufficiently low in concentration and extent and that no further soil remediation was necessary. The organics were sufficiently low (below CUO), as can be seen in the previous submittal (C-686-M-1). Therefore, no further soil sampling or excavation needs to occur.

Note that this does not relieve Aubrey of groundwater monitoring. Therefore, while the remaining soil is considered clean, the groundwater still needs further monitoring.

Per CORE's request, VOCs were restudied. VOCs are not of concern at this facility.

-MAH
8/3/93

MEMORANDUM

DATE: July 30, 1993

TO: CORE

FROM: Michael A. Heaton, CAU, PS, BOL

SUBJECT: 1110905002 -- McHenry County (Union, IL)
Aubrey Manufacturing Company (ILD995238159)

Summary: This submittal is intended to be a request for CORE to review this document and to make a site-specific evaluation on whether additional remedial activities need to be conducted.

Aubrey Manufacturing Company, which manufactures steel and plastic ventilation hoods, is undergoing RCRA closure of a surface impoundment at its facility in Union, Illinois. Attachment 1 indicates the location of this facility on a USGS topo map. Prior to 1983, the facility was also involved in brass, copper, and zinc electroplating operations where cyanides were used. Plating wastes were treated and discharged into the surface impoundment from approximately 1960 until 1983 and was an evaporation impoundment. On occasion, plating wastes were not treated and were discharged into the impoundment. This surface impoundment was in operation If any discharges occurred, they would have occurred along the pathway known as the historical runoff pathway (a swale) (see Attachment 3). This historical runoff pathway is discussed in greater detail later in this document. Aubrey reportedly treated the remaining contents of the surface impoundment in 1985 by pH adjusting and then adding hypochlorite to destruct cyanide. Impoundment contaminated soil, sludge, and debris were shipped to PDC during November 1992 until January 1993 under the following hazardous waste numbers: F001, F002, F003, F005, F006, F007, and F008. Water from the impoundment was shipped to Clean Harbors of Chicago.

In connection with the exercise of an option to buy the real property at the Union, Illinois site, Aubrey agreed to clean up certain contaminants discovered during a property investigation in the area of the former surface impoundment. Attachment 2 indicates the current boundaries of the excavation. The depth of this excavation is approximately 12 ft. Attachment 3 indicates the locations of the three soil samples collected on the historical runoff pathway. The buildings shown in the path of the historical runoff pathway are relatively new buildings and were not present at the time that the runoff pathway existed. Additionally, the runoff pathway is not known to have been used, but it is the pathway that would have been used if the lagoon overflowed.

Attachment 4 shows the locations and actual concentrations of exceedances of the Agency established CUOs (based upon the protection of Class I groundwater. It should be noted that the facility was required to collect surface soil samples from the areas south and west of the impoundment to determine if these areas had received surface run-off from overflows, etc. of the impoundment and to determine if the machinery used in the excavation of the impoundment had detrimentally affected this area

by "tracking" potentially contaminated soil on its tracks, etc. Attachment 5 shows the exceedances of the Agency established CUOs and Aubrey's site specific CUOs based upon their evaluation of background concentrations. A study of Aubrey's site-specific cleanup objectives by the author revealed that the data is skewed high for copper and zinc due to four background sampling locations which were apparently collected from an area which had been affected by past use of that area by the facility. Specifically, unnaturally high values of copper (TCLP) and zinc (TCLP) were detected in background soil sampling locations BSS-6 through BSS-10 (the values detected for metals in the background soil samples are located in Attachment 6 and the location of the background soil samples are located in Attachment 2. The handwritten numbers on Attachment 6 are the calculated values for copper and zinc without the results of sampling locations BSS-7 through BSS-10 calculated into the equation.

Only 16 sampling locations at the impoundment, including the drainage pathway, detected any parameters above Agency established CUOs or Agency approved background levels. These locations and the corresponding levels of contaminants (all were metals) are as follows (all values are in mg/l (TCLP)):

	Sampling Location	As	Ba	Cu	Cyanide	Pb	Se
CUO	(surface(1))	0.05	2.0	0.65	0.2	0.0075	0.05
CUO	(shallow(1))	0.056(2)	2.0	0.65	0.2	0.0075	0.05
CUO	(Class I)	0.05	2.0	0.65	0.2	0.0075	0.05
CUO	(Class II)	0.2	2.0	0.65	0.6	0.1	0.05
	SS9		2.5	0.68			
	14			3.5	0.32		
	18			2.4			
	20			0.043			0.1
	25					0.015	
	26			2.3			
	29					0.01	
	30					0.03	
	32		2.7				
	33			4.5		0.01	
	38	0.08		1.9			0.14
	45					0.011	
	46			0.89			
	49			1.1			
	50					0.012	
	52					0.01	
	B1 (3)					0.019	

Notes: (1) CUO (surface) is the surficial CUO; CUO (shallow) is the CUO for approximately 3 to 5 ft (the CUO is broken up this way to account for background values).

(2) The CUO (shallow) for arsenic reflects the background value.

(3) Sample location B1 is one of three soil samples collected along the historic drainage pathway.

The CUO (surface) for Cd was 0.093, the CUO (shallow) for Cd was 0.087 (the established value was 0.005). Although cadmium was detected in numerous soil samples, (see Attachment 5), these higher numbers appear to be reflective of background.

Soil sampling locations SS45 and SS46 are both in close proximity to the walls of the adjacent building. To excavate closer to the building could theoretically jeopardize its integrity.

Attachment 7 locates the facility on the map entitled "Potential for Contamination of Shallow Aquifer from Land Burial of Municipal Waste" (ISGS, 1984). Note that on this map the facility is located in Section A2 which is described in Attachment 7, page 2/2 as being "Thick, permeable sand and gravel within 20 ft. of land surface". However, due to the low concentrations and volumes involved and the fill material present at the unit, the CAU does not feel that any contamination would detrimentally affect the groundwater at this facility.

The CAU's recommendation, based upon the limited extent of contamination, the low concentrations detected (most just over the CUO, all less than one order of magnitude), and the assumptions that enter into the establishment the IEPAs conservative CUOs, it is recommended that no further soil remediation be carried out at this facility. It should be noted that the facility will be required to conduct at least four quarters of groundwater monitoring. However, additional groundwater monitoring will be required to ensure that the facility has not detrimentally impacted the groundwater.

Attachments:
1. USGS topo map of the facility and surrounding area
2. Current boundary of excavation & soil sampling locations
3. Historic runoff pathway and its soil sample locations
4. Exceedances of the Agency established CUOs
5. Exceedances of the Agency established CUOs and background values
6. detected background values and summary table
7. regional geology

Michael A. Heaton 8/9/93
Michael A. Heaton date
Project Engineer

James K. Moore 8/9/93
James K. Moore date
CAU manager

Lawrence W. Eastep date
Permit Sec. Manager

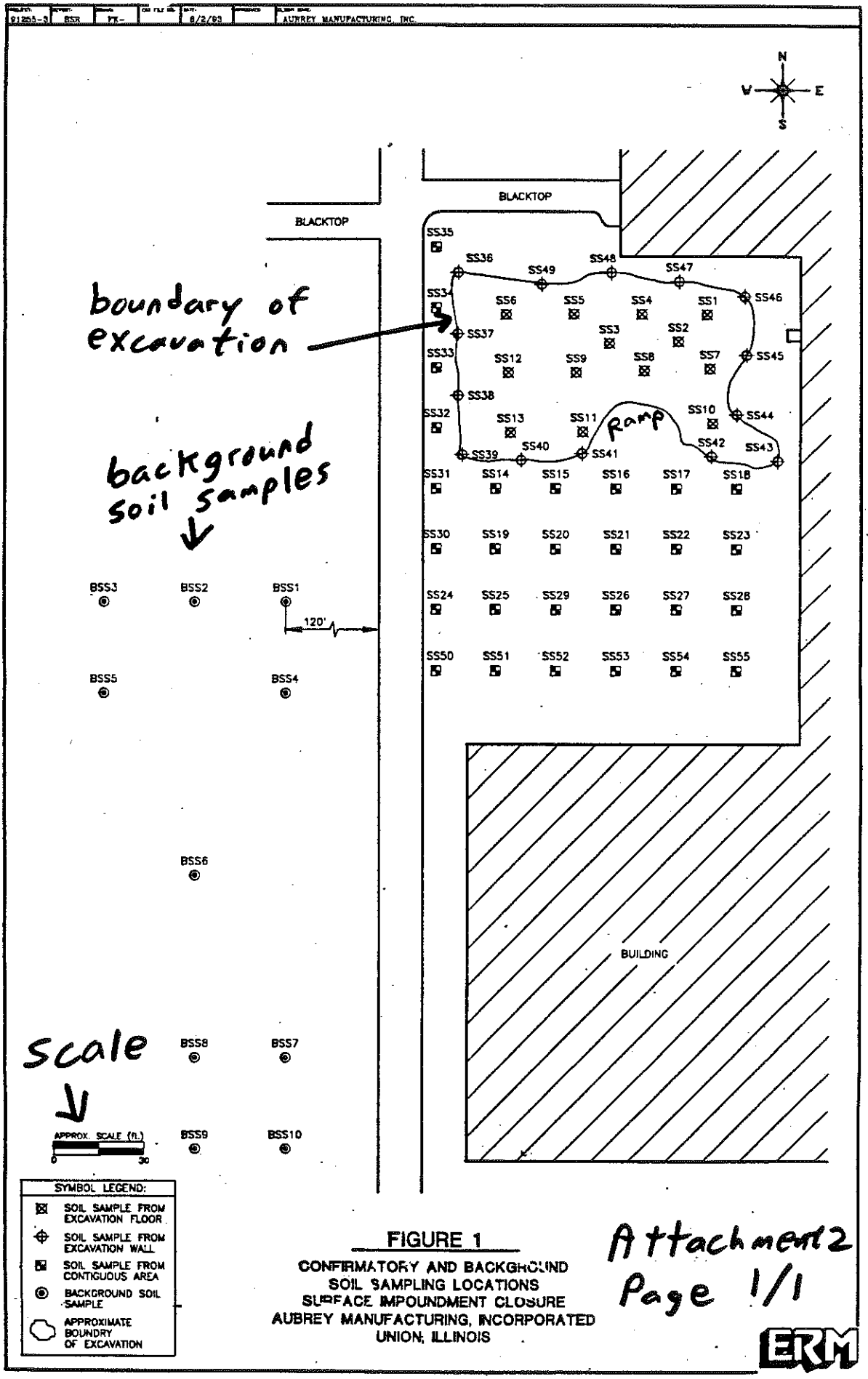


FIGURE 1

CONFIRMATORY AND BACKGROUND SOIL SAMPLING LOCATIONS
SURFACE IMPOUNDMENT CLOSURE
AUBREY MANUFACTURING, INCORPORATED
UNION, ILLINOIS

Attachment 2
Page 1/1

ERM

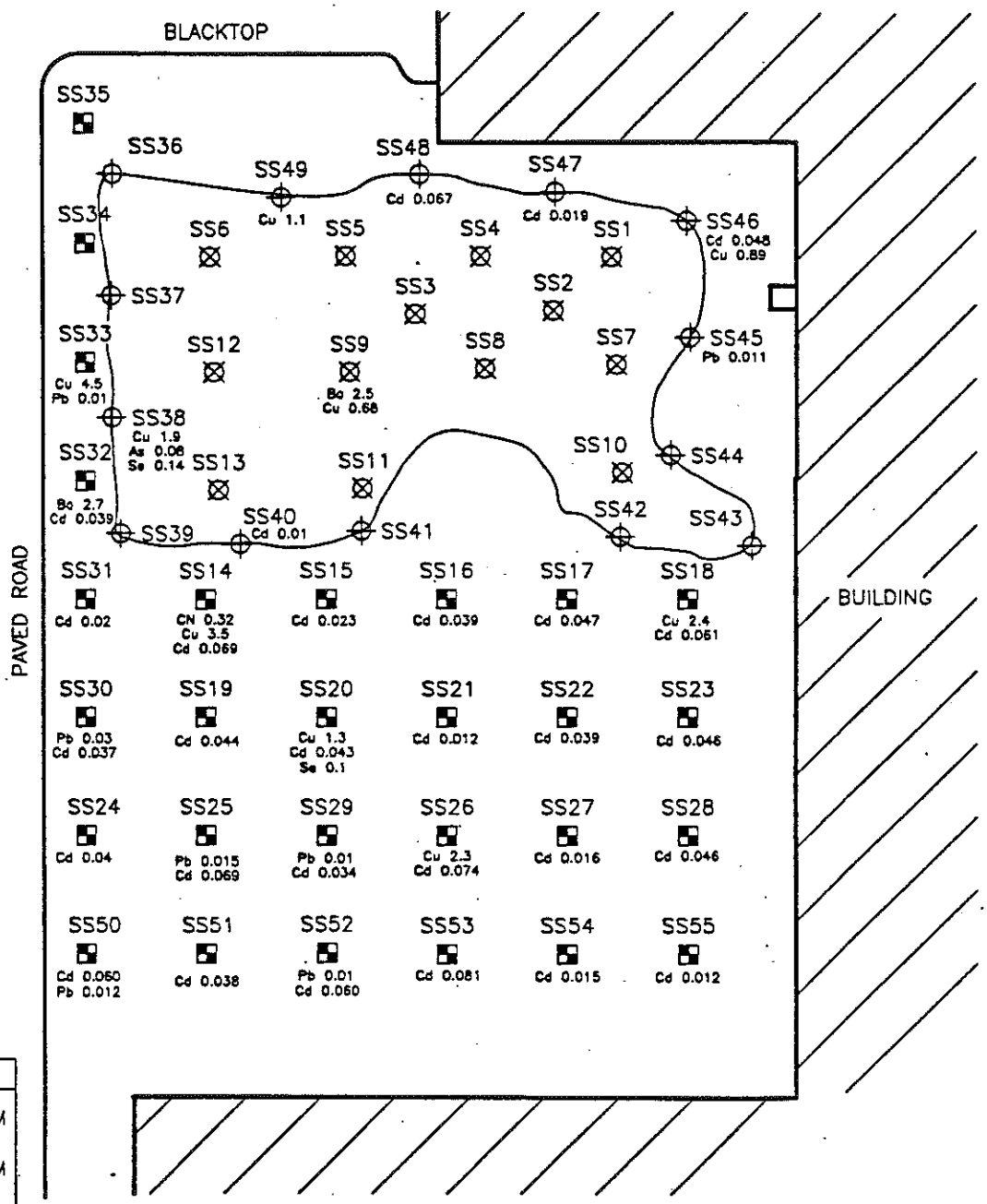


FIGURE 3

EXCEEDANCES OF IEPA CLEANUP OBJECTIVES AUBREY MANUFACTURING, INCORPORATED UNION, ILLINOIS

Attachment 4
Page 1/1

PROJECT: 91255-3 | REPORT: SSR | DRAWN: FK- | CAD FILE NO. | DATE: 6/2/93 | APPROVED | CLIENT NAME: AUBREY MANUFACTURING, INC.

TABLE 5
BACKGROUND SURFACE SOIL SAMPLES
AUBREY MANUFACTURING, INC.
UNION, ILLINOIS

Parameter	Soil Samples (0.5'-1' below ground surface)										
	BSS-1	BSS-1D	BSS-2	BSS-3	BSS-4	BSS-5	BSS-6	BSS-7	BSS-8	BSS-9	BSS-10
Inorganics (mg/L)											
Arsenic	<0.004	<0.004	<0.004	0.005	<0.004	<0.004	<0.004	0.009	0.019	0.029	0.024
Barium	0.99	0.81	0.69	0.69	0.71	0.58	0.76	0.76	0.63	0.67	0.61
Cadmium	0.014	0.0008	0.0006	0.037	0.0014	0.081	0.071	0.038	0.044	0.051	0.055
Chromium	<0.001	<0.004	<0.001	<0.001	<0.01	0.003	<0.001	<0.01	<0.01	<0.01	<0.01
Copper	0.005	0.009	0.006	0.005	0.014	0.007	0.17	0.42	2.2	3.5	3.8
Lead	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	0.008	0.006
Mercury	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.002
Nickel	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05
Selenium	<0.004	<0.004	<0.004	0.006	<0.004	0.007	0.008	0.008	0.013	0.016	0.02
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Zinc	0.15	0.25	0.17	0.13	0.23	0.13	0.66	0.74	3.6	4.4	4.5

Attachment 6
Page 1/3

TABLE 7

ANALYSIS OF BACKGROUND SAMPLING RESULTS[a]
AUBREY MANUFACTURING, INC.
UNION, ILLINOIS

Parameter	Surface Soil (6 to 12 inches BGS)		Shallow Soil (3 to 5 feet BGS)	
Arsenic	NOD:	5 of 10	NOD:	6 of 13
	AVG:	0.011	AVG:	0.009
	STD:	0.010	STD:	0.024
	MAX:	0.029	MAX:	0.088
	UCI:	0.030	UCI:	0.056
Barium	NOD:	10 of 10	NOD:	13 of 13
	AVG:	0.709	AVG:	0.622
	STD:	0.1150	STD:	0.170
	MAX:	0.990	MAX:	1.10
	UCI:	0.934	UCI:	0.955
Cadmium	NOD:	10 of 10	NOD:	13 of 13
	AVG:	0.039	AVG:	0.064
	STD:	0.027	STD:	0.012
	MAX:	0.081	MAX:	0.074
	UCI:	0.093	UCI:	0.087
Copper	NOD:	10 of 10	NOD:	11 of 13
	AVG:	1.013	AVG:	0.242
	STD:	1.54	STD:	0.829
	MAX:	3.80 → 0.015	MAX:	3.00 → 0.028
	UCI:	4.04	UCI:	1.87
Lead	NOD:	2 of 10	NOD:	4 of 13
	AVG:	0.0046	AVG:	0.0044
	STD:	0.0013	STD:	0.001
	MAX:	0.008	MAX:	0.007
	UCI:	0.007	UCI:	0.007
Nickel	NOD:	0 0f 10	NOD:	0 of 10
	AVG:	ND	AVG:	ND
	STD:	ND	STD:	ND
	MAX:	ND	MAX:	ND
	UCI:	ND	UCI:	ND
Selenium	NOD:	7 of 10	NOD:	13 of 13
	AVG:	0.009	AVG:	0.014
	STD:	0.005	STD:	0.008
	MAX:	0.020	MAX:	0.030
	UCI:	0.020	UCI:	0.029

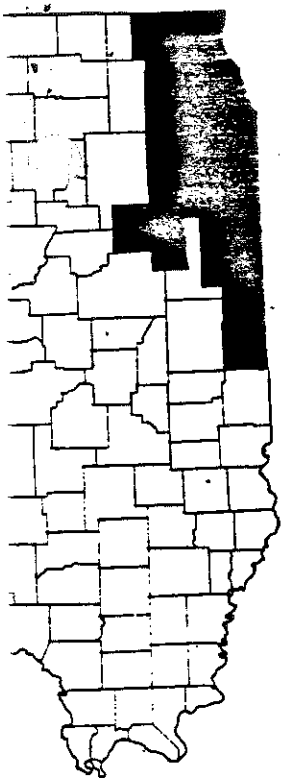
Key:

BGS = Below ground surface
AVG = Average
MAX = Maximum detected concentration
NOD = Number of samples with a detectable concentration
STD = Sample group standard deviation
UCI = Upper confidence interval concentration
ND = Not detected

Attachment 6
Page 3/3

Note: [a] The average, standard deviation, maximum, and upper conficence interval concentrations are in units of mg/l.

OF WASTES



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Description of Geologic Materials
(Listed generally in decreasing order of susceptability
to contamination of usable groundwater
by landfilling of wastes.)

M		Manmade land or surface mines
L		Lake
A1	ft. 20 50	Permeable bedrock at or within 20 feet of land surface, variable overlying materials
A2	20 50	Thick, permeable sand and gravel within 20 ft of land surface.
A3	20 50	Permeable bedrock generally within 20 ft of land surface; where deeper, sand and gravel may be present.
A4	20 50	Cemented sandstone within 20 ft of land surface; variable, relatively impermeable overlying materials.
A5	20 50	Permeable bedrock generally within 20 ft of land surface; overlying materials variable but mostly till.
AX	20 50	Alluvium, a mixture of gravel, sand, silt, and clay along streams, variable in composition and thickness.
B1	20 50	Sand and gravel less than 20 ft thick over relatively impermeable till or bedrock.
B2	20 50	Sand and gravel, within 20 ft of surface, overlain and underlain by relatively impermeable till, other fine-grained material, and/or bedrock.
BX		Map complex of permeable bedrock on ridges, underlain primarily by shale on slopes and valleys.
C1	20 50	Permeable bedrock within 20 to 50 ft of surface, overlain by till or other fine-grained material.
C2	20 50	Sand and gravel within 20 to 50 ft of surface, overlain and underlain by relatively impermeable till, other fine-grained material, and/or bedrock.
C3	20 50	Permeable bedrock, mostly within 20 to 50 ft of surface, overlain by till or other fine-grained materials; bedrock surface below 50 ft in places.
C4	20 50	Cemented sandstone, within 20 to 50 ft of surface, overlain by relatively impermeable till or other fine-grained materials.
C5	20 50	Predominantly till with discontinuous sand and gravel locally present within 50 ft of surface.
D	20 50	Uniform, relatively impermeable sandy till at least 50 ft thick, no evidence of interbedded sand and gravel
E	20 50	Uniform, relatively impermeable silty or clayey till at least 50 ft thick; no evidence of interbedded sand and gravel.
F	20 50	Relatively impermeable bedrock within 20 ft of surface, mostly overlain by till or other fine-grained materials.
		Relatively impermeable bedrock within 20 to 50 ft of surface, overlain by till or

Attachment 7
Page 2/2

C-486-M-2

JKK
KAA

ERM EnviroClean
North Central, Inc.
1110 North Third Street
Suite 660
Milwaukee, WI 53203
414-289-9505
414-289-9552 Fax

A Member of the Environmental
Resources Management Group

June 9, 1993

Mr. Michael A. Heaton
Permit Section
Division of Land Pollution Control
Illinois Environmental Protection Agency
2200 Churchill Road
P. O. Box 19276
Springfield, IL 62794-9276

RE: 111090502--McHenry County
Background Soil Sampling Report
Aubrey Manufacturing, Inc.
Union, Illinois
ILD005238159

Dear Michael:

Enclosed for your review is a copy of the Background Soil Sampling Report for the Aubrey Manufacturing, Inc. facility in Union, Illinois. This report is being submitted in support of the Closue Plan dated April 15, 1993.

Should you have any questions or comments concerning this document, please contact me at (414) 289-9505.

Sincerely,

ERM ENVIROCLEAN-NORTH CENTRAL, INC.

James E. Kane

James E. Kane, P.E.

JEK/sam
enclosure

cc: Michael F. Wirtz, Aubrey Manufacturing, Inc.
Robert E. Dunlap, Broan Mfg. Co., Inc.
Scott L. Glickson, Esq., Gordon & Glickson, P.C.
Dennis P. Reis, Esq., Sidley & Austin